

REMARKS

I. ABSTRACT

The abstract has been amended per the Examiner's suggestions.

II. OBJECTIONS, claims 24-29

Claims 24-29 stand objected to because of various purported grammatical informalities.

Claims 24 and 25 have been canceled, and claims 26-29 have been clarified by the above amendments to the claims. Claims 26-29 are now in condition for allowance.

III. INDEFINITENESS 35 U.S.C. § 112, claim 26

Claim 26 stands rejected as allegedly indefinite due to the terms "wherein said test controllers is provided as a chip IP on said semiconductor wiring substrate" and "as its." Claim 26 has been clarified by amendment. Claim 26 is now in condition for allowance.

IV. PRIOR ART REJECTIONS, claims 24-29

Claims 24 and 25 have been withdrawn. Claim 26 has been amended into independent form, and claims 27-29 have been amended to depend from claim 26.

A. Independent claim 26, and dependent claims 27-29

With regard to the present invention, claim 26 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Sparks et al. (US Patent 6,321,277) in view of Rearick (U.S. Patent 6,715,105).

To establish *prima facie* obviousness under 35 U.S.C. § 103(a) requires that all the claim limitations must be taught or suggested by the prior art. *In re Rokya*, 490 F. 2d 981, 180 USPQ 580 (CCPA 1974). Claim 26 (amended) recites the following three limitations:

"a semiconductor wiring substrate having a semiconductor substrate and a wiring layer formed on the semiconductor substrate;

a plurality of chip intellectual properties (IPs) mounted on said semiconductor wiring substrate by being bonded on the semiconductor wiring substrate; and

a specified chip IP including a test controller provided on said semiconductor wiring substrate for the purpose of controlling a circuit in each of said plurality of chip IPs.”

Neither Sparks nor Rearick disclose a “specified chip IP including a test controller” which is “mounted on said semiconductor substrate by being bonded.” To the contrary, Sparks merely discloses that Test Access Port Controller (TAP) 32 is embedded within substrate 25. See Sparks column 4, lines 47-58, which states “Test Access Port (TAP) controller 32 . . . Instruction register 33 and bypass register 34 are also embedded within substrate 25.” Similarly, Rearick merely discloses a TAP embedded inside a chip, stating “Chip 10 includes a TAP circuit block 20” at column 2, line 14, and Figure 1. In other words, TAP circuit block 20 is physically a part of the chip 10 and cannot be bonded to the chip after the chip has been formed. Thus, the cited prior art does not disclose at least the claim 26 limitation “specified chip IP including a test controller” which is “mounted on said semiconductor substrate by being bonded.” Accordingly, as Sparks and Rearick taken alone or in combination with one another, at a minimum, fail to disclose or suggest this element of claim 26, the combination of Sparks and Rearick cannot be utilized to reject claim 26 under 35 U.S.C. § 103(a). Independent claim 26 is in condition for allowance.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as independent claim 26 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon (claims

27-29) are also patentable. In addition, it is respectfully submitted that the dependent claims 27-29 are patentable based on their own merits by adding novel and non-obvious features to the combination.

For example, dependent claim 27 recites “an internal scan test circuit.” Neither Sparks nor Rearick disclose an internal scan test circuit. Rather, Sparks merely discloses “Test Access Port (TAP) controller 32 controls the boundary scan protocol and the sequencing of scan cells 11. It generates 1149.1 test logic control signals.” Thus, Sparks merely performs boundary scan operations per IEEE 1149.1 protocols, and does not perform internal scan tests.

Additionally, regarding dependent claim 27, neither Sparks nor Rearick disclose the capability of performing an internal scan test and a boundary scan test simultaneously.

Similarly, dependent claims 28 and 29 also add novel and non-obvious features.

Thus, dependent claims 27-29 are also in condition for allowance.

V. CONCLUSION

For at least the above reasons, all pending claims 26-29 are in condition for allowance. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call the Applicant's attorney at the telephone number shown below.

Application No.: 10/828,263

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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Date: September 26, 2006